TÜBİTAK

Turkish Journal of Zoology

http://journals.tubitak.gov.tr/zoology/

Short Communication

Turk J Zool
(2015) 39: 335-337
© TÜBİTAK
doi:10.3906/zoo-1401-54

New records of tenuipalpid mites (Acari: Tenuipalpidae) for the Georgian and Caucasus fauna

Tea ARABULI[1,*], Sultan ÇOBANOĞLU[2], Eristo KVAVADZE[3]

[1]Institute of Entomology, Agricultural University of Georgia, University Campus at Digomi David Aghmashenebeli Alley, Tbilisi, Georgia
[2]Department of Plant Protection, Faculty of Agriculture, Ankara University , Dışkapı, Ankara, Turkey
[3]Institute of Zoology, Ilia State University, Tbilisi, Georgia

Received: 23.01.2014 • **Accepted:** 01.06.2014 • **Published Online:** 27.02.2015 • **Printed:** 27.03.2015

Abstract: Three flat mite species—*Brevipalpus cuneatus* (Canestrini & Fanzago, 1876), *Aegyptobia tragardhi* Sayed, 1950, and *Aegyptobia beglarovi* Livschitz & Mitrofanov, 1967—were registered for the first time for the Georgian fauna, of which *B. cuneatus* and *A. tragardhi* are new records in the Caucasus. Consequently, in adding these new records, the total number of tenuipalpid mites in Georgia is increased to 31 species.

Key words: Tenuipalpidae, *Brevipalpus*, *Aegyptobia*, Georgia, Caucasus

The family Tenuipalpidae has been described in all zoogeographical regions, from all manner of vascular plants. Several species are pests, either directly damaging plants or vectoring plant viruses. Tenuipalpidae contains 1100 species belonging to 38 genera (Mesa et al., 2009; Beard et al., 2012). *Brevipalpus* Donnadieu, 1875 and *Aegyptobia* Sayed, 1950 are 2 large and widespread genera. According to Mesa et al. (2009), *Brevipalpus* included 282 species and *Aegyptobia* 93 species. Since then, several new species of these 2 genera have been described. In 2013 and 2014, 2 new species from the genus *Brevipalpus* have been described. One of them, *Brevipalpus incognitus* Ferragut & Navia, is from the Americas (Brazil, Chile, USA) (Navia et al., 2013), and the other, *Brevipalpus noranae* Halawa & Fawzy, is from Egypt (Halawa and Fawzy, 2014). In addition, 6 new species have been described from the genus *Aegyptobia*. Five of them are from Iran: *A. bromi* Khanjani, Khanjani & Seeman; *A. nazarii* Khanjani, Khanjani & Seeman (Khanjani et al., 2012); *A. jiroftiensis* Farzan, Asadi, Ueckermann & Shervani 2012; *A. hormozgani* Farzan, Asadi, Ueckermann & Shervani (Farzan et al., 2012); and *A. pirii* Khanjani, Zahiri & Khanjani (Khanjani et al., 2013b). The other species, *A. yertle* Seeman & Beard, was described from Australia (Seeman and Beard, 2011).

Until now, the Tenuipalpidae mite fauna in Georgia was represented by 5 genera and 28 species (Reck, 1959, 1976; Mitrofanov and Strunkova, 1979; Tskitishvili, 2000; Arabuli, 2008; Arabuli and Kvavadze, 2013). Among them, 15 species have been recorded from the genus *Brevipalpus* and only 3 species from the genus *Aegyptobia*. The fauna of Tenuipalpidae is likely underestimated in Georgia, as it is in many parts of the world, because the mite fauna is poorly studied in this area. Therefore, new records and new species are likely, especially considering that 21% of the vascular plants known from Georgia are endemic for the Caucasus and Georgian flora (Gagnidze, 2005). The 3 species of flat mites reported here are new records for the Georgian fauna, and 2 are new for the Caucasus fauna. There are also 2 new host plants for the species *Aegyptobia beglarovi*.

Materials were taken weekly from 2011 to 2013 all over Georgia from transects aimed to survey the flat mite fauna of Georgia. Samples were collected from varied hosts in different habitats, including leaves and twigs, and were individually bagged in tightly closed plastic bags and transported the same day to the laboratory. The elevation and longitude/latitude were recorded for each locality using a handheld Garmin global positioning device. Mites were extracted using distilled water and filtered through different sieves (20 µm, 400 µm), and then preserved in Petri dishes containing 70% ethanol. Selected mites were cleaned in lactic acid for 1 week at room temperature and then washed with distilled water. Subsequently, mites were mounted on microslides in Hoyer's medium (Reck, 1959; Vacante, 2010). Specimens were examined under an MC50LE microscope with differential face contrast.

* Correspondence: t.arabuli@agruni.edu.ge

The terminology and original description used in the key follows Pritchard and Baker (1958), Reck (1959), Livschitz and Mitrofanov (1967), Mitrofanov et al. (1975), and Mitrofanov and Strunkova (1979).

Type materials were deposited in the Entomology Institute (Arthropods Laboratory) of the Agricultural University of Georgia.

Family Tenuipalpidae Berlese

Genus *Brevipalpus* Donnadieu, 1875

***Brevipalpus cuneatus* (Canestrini & Fanzago, 1876)**

Caligonus cuneatus - original designation (Mesa et al., 2009),

Tenuipalpus cuneatus Berlese, 1887 (Mesa et al., 2009),

Brevipalpus cuneatus Baker, 1949 (Mesa et al., 2009),

Hystripalpus cuneatus Mitrofanov & Strunkova, 1979 (Mesa et al., 2009).

Examined material: 2 adult females ex. *Hedera colchica* (Araliaceae) (C.L.Koch) (Slide No.: 834; Date: 03.12.2012); Georgia: source of the river Chishura (42°15′N, 42°49′E; elevation 139 m), Terjola district, West Georgia, coll. T. Arabuli, E. Kvavadze.

Geographical distribution: Ukraine (Livschitz and Mitrofanov, 1967; Mitrofanov and Strunkova, 1979); Italy (Canestrini and Fanzago, 1876); Greece, Italy (http://www.faunaeur.org).

Remarks: New record for Georgian and Caucasus fauna.

Genus *Aegyptobia* Sayed, 1950

***Aegyptobia tragardhi* Sayed, 1950**

Pentamerismus tragardhi Baker & Pritchard, 1953 (Mesa et al., 2009),

Aegyptobia (*Aegyptobia*) *tragardhi* Mitrofanov et al., 1975 (Mesa et al., 2009),

Aegyptobia ueckermanni Khosrowshahi & Arbabi, 1997 (Khanjani et al., 2012).

Examined material: 5 adult females and 1 nymph ex. *Thuja orientalis* L. (Slide Nos.: 647, 648; Date: 22.06.2012); Georgia: Dendropark of Agricultural University (41°48′N, 044°46′E; elevation 615 m), coll. T. Arabuli.

Geographical distribution: Uzbekistan, Tajikistan, Egypt (Mitrofanov and Strunkova, 1979); Egypt (Sayed, 1950); Iran (Farzan et al., 2012).

Remarks: New record for Georgian and Caucasus fauna. The specimens were found on the same host species as the holotype.

***Aegyptobia beglarovi* Livschitz & Mitrofanov, 1967**

Aegyptobia (*Aegyptobia*) *beglarovi* Mitrofanov et al., 1975 (Mesa et al., 2009),

Aegyptobia kharazii Mesa & Moraes, 2007 (Khanjani et al., 2013a),

Aegyptobia meyerae Khosrowshahi & Arbabi, 1997 (Khanjani et al., 2013a).

Examined material: 16 adult females and 3 nymphs ex. *Juniperus oxycedrus* L. (Slide Nos.: 553, 633, 661; Date: 01.07.2011, 19.06.2012, 02.07.2012); Georgia: plateau of Nutsubidze (41°43′N, 44°43′E; elevation 626 m), coll. T. Arabuli, E. Kvavadze.

Three adult females ex. from new host plant *Artemisia phylostachys* (Boiss) (Slide No.: 652; Date: 26.06.2012); Georgia: plateau of Nutsubidze (41°43′N, 044°43′E; elevation 692 m), coll. T. Arabuli, E. Kvavadze. Seven adult females and 4 nymphs ex. *Juniperus communis* L. (Slide Nos.: 614, 673, 676; Date: 16.05.2012, 17.07.2012, 24.07.2012); Georgia: Dendropark of Agricultural University of Georgia (41°48′N; 044°46′E; elevation 615 m), coll. T. Arabuli. Three adult females and 1 nymph ex. from new host plant *Cupressus sempervirens* L. (Slide No.: 649; Date: 22.06.2012); Georgia: III massive of Varketily (41°41′N, 044°52′E; elevation 459 m), coll. T. Arabuli.

Geographical distribution: Ukraine, Azerbaijan (Mitrofanov and Strunkova, 1979); Ukraine (Livschitz and Mitrofanov, 1967); Turkey (Uysal et al., 2001; Bayram and Cobanoğlu, 2007); Iran (Khanjani at al., 2008, 2013b).

Remarks: New record for Georgian fauna. The host plants *Artemisia phylostachys* and *Cupressus sempervirens* are new.

References

Arabuli T (2008). Tetranychoid mites (Acari: Tetranychoidea) fauna of Georgia. Proceedings of Georgian Academy of Science Biol Ser B 6: 86–97.

Arabuli T, Kvavadze E (2013). New record for Caucasus fauna: *Cenopalpus* (*Cenopalpoides*) *wainsteini* Livschitz & Mitrofanov, 1967 (Acari: Tenuipalpida), additional description and three new host plants. Int J Acarol 39: 538–541.

Bayram Ş, Çobanoğlu S (2007). Mite fauna (Acari: Prostigmata, Mesostigmata, Astigmata) of coniferous plants in Turkey. Türk Entomol Derg 31: 279–290.

Beard JJ, Ochoa R, Bauchan GR, Trice MD, Redford AJ, Walters, TW, Mitter C (2012). Flat Mites of the World. 2nd ed. Ft. Collins, CO, USA: Identification Technology Program, CPHST, PPQ, APHIS, USDA.

Canestrini G, Fanzago F (1876). Nuovi acari Italiani. Atti Academia Cientifico Veneto, Trentino, Istriana, Pádua, Italy 5: 130–142 (in Italian).

Donnadieu AL (1875). Recherches pour servir a l'histoire des Tétranyques. Thesis, Lyon Faculty of Science, Lyon, France (in French).

Farzan S, Asadi M, Ueckermann E, Shirvani A (2012). Two new flat mite species of the genus *Aegyptobia* Sayed, 1950 (Acari: Trombidiformes: Tenuipalpidae) from Iran. Zootaxa 3295: 30–58.

Gagnidze R (2005). Vascular Plants of Georgia: A Nomenclatural Checklist. Tbilisi, Georgia: Georgia Academy of Sciences.

Halawa AM, Fawzy M (2014). A new species of *Brevipalpus* Donnadieu (Acari: Tenuipalpidae) and key to the Egyptian species. Zootaxa 3755: 87–95.

Khanjani M, Farzan S, Asadi M, Khanjani M (2013a).Checklist of the flat mites (Acari: Trombidiformes: Tenuipalpidae) of Iran. Persian Journal of Acarology 2: 235–251.

Khanjani M, Gotoh T, Barimani VH (2008). A new species of the genus *Aegyptobia* Sayed (Acari: Prostigmata, Tenuipalpidae) from Iran. Systematic & Applied Acarology 13: 65–69.

Khanjani M, Khanjani M, Seeman OD (2012). The false spider mites of the genera *Aegyptobia* Sayed and *Phytoptipalpus* Trägårdh (Acari: Tenuipalpidae) from Iran. Zootaxa 3295: 30–58.

Khanjani M, Zahiri B, Khanjani M (2013b). A new species of *Aegyptobia* (Acari: Tenuipalpidae) from Hamedan province, Iran. Persian Journal of Acarology 1: 49–55.

Livschitz IZ, Mitrofanov VI (1967). Materials to the cognition of the Acariformes: Tenuipalpidae fauna. Proceedings Nikitsky Botanic Garden 39: 1–72 (article in Russian with an abstract in English).

Mesa NC, Ochoa R, Welbourn WC, Evans GA, Moraes GJ (2009). A catalog of Tenuipalpidae Berlese of the world (Acari: Prostigmata). Zootaxa 2098: 1–185.

Mitrofanov VI, Bosenko LI, Bichevskis MY (1975). A key for determination of tetranychoid mites of coniferous trees. Zinathe Publ 3–40 (article in Russian with an abstract in English).

Mitrofanov VI, Strunkova ZI (1979). Opredelitel Kleshei-Ploskotelok. Dushanbe, USSR: Donish Publishing House (in Russian).

Navia D, Mendonca RS, Ferragut F, Miranda LC, Trincado RC, Michaux J, Navajas M (2013). Cryptic diversity in *Brevipalpus* mites (Tenuipalpidae). Zool Scr 42: 406–426.

Pritchard AE, Baker EW (1958). The False Spider Mites (Acarina: Tenuipalpidae). Berkeley, CA, USA: University of California Press.

Reck GF (1959). Opredelitel tetranykhovikh kleshei. Tbilisi, Georgia: Publishing House of the Academy of Science of GSSR (in Russian).

Reck GF (1976). Katalog Acarofauni Gruzinskoi CCR. Tbilisi, Georgia: Metsniereba Publ. (in Russian).

Sayed MT (1950). Description of a new genus and two new species of the family Tenuipalpidae Sayed (Acarina). In: Proceedings of the 8th International Congress of Entomology. Stockholm: Axel R. Elfstroms, pp. 1018–1021.

Seeman OD, Beard JJ (2011). A new species of *Aegyptobia* (Acari: Tenuipalpidae) from Myrtaceae in Australia. Systematic & Applied Acarology 16: 73–89.

Tskitishvili M (2000). Catalogue of Tetranychoidea ticks in Georgia. Proceedings of the Institute of Zoology 20: 95–100.

Uysal C, Çobanoğlu S, Ökten ME (2001). Determination of Tetranychoidea (Acarina: Prostigmata) species harmful in the park area of Ankara. Türk Entomol Derg 25: 147–160.

Vacante V (2010). Citrus Mites: Identification, Bionomy, and Control. Wallingford, UK: CAB International.